Project Proposal Template

Insert cover page (e.g artist impression of the development as the background, name of the development, project team logos, etc.)

Executive Summary

Insert info on the project including: -

- *Project Name/Name of Development*
- *Project Description/Development Address*
- *Development Type*
- *BP Ref No. (if any)*
- *PP/WP Ref No. (if any)*
- *Site area*
- *GFA / CFA*
- *Project Commencement and Completion Date*
- *Projected TOP*
- *Project Team: -*
    - *Developer/Building Owner*
    - *Design Architect*
    - *Consultants*
    - *Main Contractor*
    - *Technical Support*
- *Contract Sum*
- *Individual cost premiums for DfMA, SLE, and IDD*

Site Layout Plans & Other Drawings

Integrated Digital Delivery Implementation Strategy

Summary of IDD use cases for implementation

Insert summary of IDD use cases for implementation across different project stage. The following is an illustration for reference. *Adoption of 5 or more of the 14 IDD essential use cases in 4 stages of the project lifecycle for non-residential and 3 stages for residential developments are required under the BE ITM Bonus GFA Incentive Scheme. Please refer to the IDD Annex for definition.*

S/N	IDD Use Cases and Innovations	Digital Design	Digital Fabrication	Digital Construction	Digital Asset Delivery & Management
1	Digital Request for Information (RFI)	●	●	●	
2	Integrated Concurrent Engineering (ICE) meetings	●	●	●	
3	Visualisation and design checks	●	●	●	
4	Digital submission & approval	●	●	●	
5	BIM-based documentation	●	●	●	
6	BIM-based cost estimation	●	●	●	
7	Digital logistics		●	●	
8	Digital construction scheduling and sequencing		●	●	
9	Digital progress monitoring		●	●	
10	Digital QA/QC inspections		●	●	
11	Digital defects management		●	●	●
12	Digital handover			●	●
13	Real-time monitoring of assets performance				●
14	Digital operations and maintenance				●

Summary of IDD implementation

The following is an illustration for reference.
[List down at least 5 IDD use cases throughout the project stages, key processes for streamlining with help of digital solutions, and measurable benefits.]

KEY USE CASE	CURRENT PROCESS (CHALLENGES)	TO-BE PROCESS	DIGITAL SOLUTION/PLATFORM	QUANTIFIABLE BENEFITS	WAY OF MEASUREMENT	ISSUES FACED IN IMPLEMENTATION*	LEARNING POINTS*
example 1. Digital QA/QC inspections	1) Paper-based inspection forms 2) Manual data collection 3) Delay corrective actions	1) reduce paper work & auto-archive inspection records 2) real-time data collection 3)early corrective/preventive actions	digital solution of ABC	% reduction of time spent for inspection approval	Manhours used for preparation and communications of inspections before and after	The platform is not easy to customize the checklist forms **May not be applicable to kick-start project. Can elaborate in the progress and/or final report.*	Standardize and streamline the checklists before digitalising
2.							
3.							
4.							
…							

IDD ANNEX

IDD Essential Digital Use Cases

<For Info >

- Common adopted use cases focus on Design Construction, Fabrication and FM stages

DESIGN	CONSTRUCTION & FABRICATION	ASSET MANAGEMENT
1. Digital Request for Information (RFI) 2. Integrated Concurrent Engineering (ICE) meetings 3. Visualisation and design checks 4. Digital submission & approval		
5. BIM-based documentation		
6. BIM-based cost estimation		
	7. Digital logistics	
	8. Digital construction scheduling and sequencing	
	9. Digital progress monitoring	
	10. Digital QA/QC inspections	
	11. Digital defects management	
		12. Digital handover
		13. Real-time monitoring of assets performance
		14. Digital operations and maintenance

IDD Essential Digital Use Cases

<For Info >

Essential Digital Use Cases across at least 3 project stages for IDD Scope

DIGITAL USE CASE	DEFINITION	DIGITAL DELIVERABLES
1. Digital Request for Information (RFI)	Raise, communicate and track issues through digital means to facilitate resolution	• Issues and resolution dashboards • Digital notes of discussion • Updated BIM models
2. Integrated Concurrent Engineering (ICE) meetings	Conduct meetings (technical, review, coordination etc.) with the relevant project team members in a collaborative way and enabled by digital technologies and BIM	• Digital records of decision (e.g. federated models), actions to be taken and party responsible
3. Visualisation and design checks	Utilise BIM models or other digital 3D models or immersive technologies e.g. Augmented Reality (AR)[1] / Virtual Reality (VR)[2] / Mixed Reality (MR)[3] to seek feedback and validate design aspects, space requirements and other settings such as buildability and constructability	• BIM models or other digital 3D models (can be further processed according to project needs) • Rendered models
4. Digital submission & approval	Submit deliverables required by various stakeholders for decision through digital means	• Information required for tracking • Decision records
5. BIM-based documentation	Prepare documents based on information primarily generated from BIM models	• BIM models • Drawings • Tender specifications

[1] Augmented Reality (AR) – Technology that allows users to see and interact with the real world with the virtual objects being overlaid in a real-world environment.
[2] Virtual Reality (VR) – Technology that immerses users in a completely virtual environment that is generated by a computer.
[3] Mixed Reality (MR) – Technology that combines virtual environment with the real-world and allows users to interact with both the real world and the virtual environment.

IDD Essential Digital Use Cases

<For Info >

DIGITAL USE CASE	DEFINITION	DIGITAL DELIVERABLES
6. BIM-based cost estimation	Estimate costs at various project stages based on available information from BIM models	• Costing models • Costing and quantity-take-off documentation
7. Digital logistics	Plan prefabrication production schedule, and track and monitor the production, delivery and installation of the prefab components digitally	• Production schedule • Digital logistic delivery records • Simulations of logistic paths and conditions (optional)
8. Digital construction scheduling and sequencing	Plan and monitor construction activities using digital construction scheduling, simulation and sequencing	• 4D time-based construction schedules, simulations or sequencing models
9. Digital progress monitoring	Monitor site progress using digital solutions/scanning and update schedules and 3D models for progress reports and payments	• Records of site progress photos, updates to schedules and 3D models; or • Progress reports (actual vs planned; current month vs previous month)
10. Digital QA/QC inspections	Record observations and track follow-ups using digital solutions	• Records of QA/QC site inspections; • Audit trails of resolution/approvals
11. Digital defects management	Manage and track defects and rectification using digital checklists and dashboards	• Master defects list • Digital defects location record • Defects rectification reports

IDD FM Use Cases

<For Info >

DIGITAL USE CASE	DEFINITION	DIGITAL DELIVERABLES
12. Digital handover	Generate digital asset information of the built physical assets and hand over as-built records, manufacturers' specifications and warranties and O&M manuals digitally	• 3D asset models with assets information • As-built records • Manufacturers' specifications and warranties • O&M manuals
13. Real-time monitoring of assets performance	Track key operating parameters of assets such as utilisation, downtime, availability etc. real-time	• Digital operating data • Object/system centric FM data collection
14. Digital operations and maintenance	Perform operations and maintenance of assets and facilities using digital platforms integrated with technologies such as IoT, sensors, data analytics etc.	• Digital maintenance records • Digital records of work orders • Audit trails of resolution/follow-ups

Green Building Concept Plan

Summary

Insert summary on how the project will meet the ≥60%Energy Savings and 40 points required to attain GM Platinum (SLE) rating under the GM:2021 criteria

Useful Resources:
GM: 2021 Criteria
GM SLE Criteria

Energy Efficiency

Insert info on EE features to be adopted for the project to meet the EE requirements based under the intended EE pathway. EE is a prerequisite in GM:2021

Refer to the Energy Efficiency Section Document for details on the requirement.

Note: all technical guides can also be found on the GM:2021 webpage

Intelligence

Insert info on GM points the project is targeting to score, if any

Refer to the Intelligence Section Document for details on the requirement

Note: all technical guides can also be found on the GM:2021 webpage

Health & Wellbeing

Insert info on GM points the project is targeting to score, if any

Refer to the Health & Well Being Section Document for details on the requirement

Note: all technical guides can also be found on the GM:2021 webpage

Whole Life Carbon

Insert info on GM points the project is targeting to score, if any

Refer to the Whole Life Carbon Section Document for details on the requirement

Note: all technical guides can also be found on the GM:2021 webpage

Maintainability

Insert info on GM points the project is targeting to score. A minimum of 10 out of the 15 available points is required under the BE ITM Bonus GFA Incentive Scheme

Refer to the Maintainability Section Document for for details on the requirement

Note: all technical guides can also be found on the GM:2021 webpage

Resilience

Insert info on GM points the project is targeting to score, if any

Refer to the Resilience Section Document for details on the requirement

Note: all technical guides can also be found on the GM:2021 webpage

Progress Report on Green Mark for Sustainability Outcome

Insert the following information:

- Progress on GM application (e.g. updates on whether the team applied for GM and been assigned a GM assessor)
- Progress on GM assessment, tentative deadline to complete GM assessment and attain GM Letter of Award
- Progress on GM verification, tentative deadline to complete GM verification and attain GM Letter of Completion

Productivity Implementation Plan

Summary

Insert summary on overall construction productivity concept including, but not limited to:

- DfMA technologies to be adopted (e.g. Prefabricated Prefinished Volumetric Construction (PPVC), Prefabricated Mechanical Electrical and Plumbing (MEP) System, etc.)
- Specific DfMA technology (e.g. PPVC, Structural Steel) coverage or expected productivity improvement achievable (e.g. 30%)
- Other productive construction technologies and methodologies adopted

DfMA Concept

Insert information on Productivity Implementation Plan including, but not limited to the following details:

- Overall DfMA concept for the project
- Overall site / block plans that demonstrates how the project optimizes the use of DfMA through the design (e.g. through high repeats of modules, standardization of components etc.)

Architectural System

Insert information on Productivity Implementation Plan including, but not limited to the following details:

- Typical block plans highlighting location where DfMA technologies are adopted
- Demonstrate design modularization and integration
- Demonstrate the coverage of DfMA technology / prefabrication level
- Demonstrate the productivity improvement achievable
- Demonstrate the level of prefabrication

Structural System

Insert information on Productivity Implementation Plan including, but not limited to the following details:

- Typical block plans highlighting location where DfMA technologies are adopted
- Demonstrate design modularization and integration
- Demonstrate the coverage of DfMA technology / prefabrication level
- Demonstrate the productivity improvement achievable
- Demonstrate the level of prefabrication

MEP System

Insert information on Productivity Implementation Plan including, but not limited to the following details:

- Typical block plans highlighting location where DfMA technologies are adopted
- Demonstrate design modularization and integration
- Demonstrate the coverage of DfMA technology / prefabrication level
- Demonstrate the productivity improvement achievable
- Demonstrate the level of prefabrication

Others

Insert information on Productivity Implementation Plan including, but not limited to the following details:

- Highlight any other innovative / productive technologies used
- Highlighting location on plan (if applicable)
- Demonstrate the coverage (if applicable)
- Demonstrate the productivity improvement achievable
- Demonstrate the level of prefabrication